



FLWEMS Paramedic Medication Information For:

VERAPAMIL

(Calan, Isopyin)

(ver-AP-ah-mil)

Pregnancy Category

C Alti-Verapamil* Apo-Verap* Calan Calan SR Chronovera* Covera HS Gen-Verapamil SR* Isoptin Isoptin I.V.* Isoptin SR Novo-Veramil* Novo-Veramil SR* Nu-Verap* Penta-Verapamil* Taro-Verapamil* Verelan Verelan PM (Rx)

Classification

Calcium channel blocking agent

See Also

See also *Calcium Channel Blocking Agents*.

Action/Kinetics

Slows AV conduction and prolongs effective refractory period. IV doses may slightly increase LV filling pressure. Moderately decreases myocardial contractility and peripheral vascular resistance. Worsening of heart failure may result if verapamil is given to clients with moderate to severe cardiac dysfunction. Onset: PO, 30 min; IV, 3-5 min. Time to peak plasma levels (PO): 1-2 hr (5-7 hr for extended-release). $t_{1/2}$, PO: 4.5-12 hr with repetitive dosing; IV, initial: 4 min; final: 2-5 hr. Therapeutic serum levels: 0.08-0.3 mcg/mL. Duration, PO: 8-10 hr (24 hr for extended-release); IV: 10-20 min for hemodynamic effect and 2 hr for antiarrhythmic effect. Metabolized to norverapamil, which possesses 20% of the activity of verapamil. **NOTE:** Covera HS is designed to deliver verapamil in concert with the 24-hr circadian variations in BP. Verelan PM allows for bedtime dosing and incorporates a 4- to 5-hr delay in drug delivery so there are maximum plasma levels in the morning.

Uses: PO

Angina pectoris due to coronary artery spasm (Prinzmetal's variant), chronic stable angina including angina due to increased effort, unstable angina (preinfarction, crescendo). With digitalis to control rapid ventricular rate at rest and during stress in chronic atrial flutter or atrial fibrillation. Prophylaxis of repetitive paroxysmal supraventricular tachycardia. Essential hypertension. Sustained-release tablets are used to treat essential hypertension (Step I therapy). IV: Supraventricular tachyarrhythmias. Atrial flutter or fibrillation

Investigational: PO for prophylaxis of migraine, manic depression (alternate therapy), exercise-induced asthma, recumbent nocturnal leg cramps, hypertrophic cardiomyopathy, cluster headaches.

Contraindications

Severe hypotension, second- or third-degree AV block, cardiogenic shock, severe CHF, sick sinus syndrome (unless client has artificial pacemaker), severe LV dysfunction. Cardiogenic shock and severe CHF unless secondary to SVT that can be treated with verapamil. Lactation. Use of verapamil, IV, with beta-adrenergic blocking agents (as both depress myocardial contractility and AV conduction). Ventricular tachycardia.

Special Concerns

Infants less than 6 months of age may not respond to verapamil. Use with caution in hypertrophic cardiomyopathy, impaired hepatic and renal function, and in the elderly.

Side Effects

CV: CHF, bradycardia, AV block, asystole premature ventricular contractions and tachycardia (after IV use), peripheral and pulmonary edema, hypotension, syncope, palpitations, AV dissociation, MI, CVA. GI: Nausea, constipation, abdominal discomfort or cramps, dyspepsia, diarrhea, dry mouth. CNS: Dizziness, headache, sleep disturbances, depression, amnesia, paranoia, psychoses, hallucinations, jitteriness, confusion, drowsiness, vertigo. IV verapamil may increase intracranial pressure in clients with supratentorial tumors at the time of induction of anesthesia. **Dermatologic:** Rash, dermatitis, alopecia, urticaria, pruritus, erythema multiforme, Stevens-Johnson syndrome. **Respiratory:** Nasal or chest congestion, dyspnea, SOB, wheezing. **Musculoskeletal:** Paresthesia, asthenia, muscle cramps or inflammation, decreased neuromuscular transmission in Duchenne's muscular dystrophy. **Other:** Blurred vision, equilibrium disturbances, sexual difficulties, spotty menstruation, sweating, rotary nystagmus, flushing, gingival

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hyperplasia, polyuria, nocturia, gynecomastia, claudication, hyperkeratosis, purpura, petechiae, bruising, hematomas, tachyphylaxis.

Laboratory Test Alterations

↑ Alkaline phosphatase, transaminase.

Overdose Management

Symptoms: Extension of side effects. *Treatment:* Beta-adrenergics, IV calcium, vasopressors, pacing, and resuscitation.

Additional Drug Interactions

Antihypertensive agents / Additive hypotensive effects *Barbiturates* / ↓ Verapamil bioavailability *Calcium salts* / ↓ Verapamil effect *Carbamazepine* / ↑ Carbamazepine effect R/T ↓ liver breakdown *Cimetidine* / ↑ Verapamil bioavailability *Clarithromycin* / Possible severe hypotension and bradycardia *Cyclosporine* / ↑ Cyclosporine plasma levels → possible renal toxicity *Digoxin* / ↑ Risk of digoxin toxicity R/T ↑ plasma levels *Disopyramide* / Additive depressant effects on myocardial contractility and AV conduction *Etomidate* / Anesthetic effect may be ↑ with prolonged respiratory depression and apnea *Lithium* / ↓ Lithium levels; lithium toxicity also observed *Muscle relaxants, nondepolarizing* / ↑ Neuromuscular blockade R/T verapamil effect on calcium channels *Prazosin* / Acute hypotensive effect *Quinidine* / Possibility of bradycardia, hypotension, AV block, VT, and pulmonary edema *Ranitidine* / ↑ Verapamil bioavailability *Rifampin* / ↓ Verapamil effect *Sulfinpyrazone* / ↑ Verapamil clearance *Theophyllines* / ↑ Theophylline effect *Vitamin D* / ↓ Verapamil effect *Warfarin* / Possible ↑ effect of either drug R/T ↓ plasma protein binding
NOTE: Since verapamil is significantly bound to plasma proteins, interaction with other drugs bound to plasma proteins may occur.

How Supplied

Capsule, extended release: 240 mg; *Injection:* 2.5 mg/mL; *Tablet:* 40 mg, 80 mg, 120 mg; *Tablet, extended release:* 120 mg, 180 mg, 240 mg

Dosage

• *Tablets Angina at rest and chronic stable angina.*

Individualized. Adults, initial: 80-120 mg t.i.d. (40 mg t.i.d. if client is sensitive to verapamil); then, increase dose to total of 240-480 mg/day. Covera HS is given once daily at bedtime in doses of either 180 or 240 mg. *Arrhythmias.*

Dosage range in digitalized clients with chronic atrial fibrillation: 240-320 mg/day in divided doses t.i.d.-q.i.d. For prophylaxis of nondigitalized clients: 240-480 mg/day in divided doses t.i.d.-q.i.d. Maximum effects are seen within 48 hr.

Essential hypertension.

Initial, when used alone: 80 mg t.i.d. Doses up to 360 mg daily may be used. Effects are seen in the first week of therapy. In the elderly or in people of small stature, initial dose should be 40 mg t.i.d.

• *Extended-Release Capsules and Tablets Essential hypertension.*

Initial: 240 mg/day in the a.m. (120 mg/day in the elderly or people of small stature). If response is inadequate, increase dose to 240 mg in the a.m. and 120 mg in the evening and then 240 mg q 12 hr. Covera HS is given once daily at bedtime in doses of either 180 or 240 mg. The dose of Verelan PM is 200 mg once daily at bedtime.

• *IV, Slow Supraventricular tachyarrhythmias.*

Adults, initial: 5-10 mg (0.075-0.15 mg/kg) given over 2 min (over 3 min in older clients); then, 10 mg (0.15 mg/kg) 30 min later if response is not adequate. Infants, up to 1 year: 0.1-0.2 mg/kg (0.75-2 mg) given as an IV bolus over 2 min; 1-15 years: 0.1-0.3 mg/kg (2-5 mg, not to exceed 5 mg total dose) over 2 min. If response to initial dose is inadequate, it may be repeated after 30 min, but not more than a total of 10 mg should be given to clients from 1 to 15 years of age.

END OF INFORMATION – NOTHING FOLLOWS